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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/730,684	12/06/2000	Marvin Luther Jones	D-1460	9210

7590 08/24/2004  
Pratt & Whitney  
Patent Department  
Mail Stop 132-13  
400 Main Street  
East Hartford, CT 06108

EXAMINER

MILLER, EDWARD A

ART UNIT	PAPER NUMBER
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3641

DATE MAILED: 08/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/730,684

Applicant(s)

JONES ET AL.

Examiner

Edward A. Miller

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MY

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 20 May 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 12-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 12-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

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1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. The amendment to the claims filed on May 20, 2002 does not comply with the requirements of 37 CFR 1.121(c) because it does not constitute a listing of claims in accordance with the new rules. Amendments to the claims filed on or after July 30, 2003 must comply with 37 CFR 1.121(c) which states:

(c) *Claims.* Amendments to a claim must be made by rewriting the entire claim with all changes (*e.g.*, additions and deletions) as indicated in this subsection, except when the claim is being canceled. Each amendment document that includes a change to an existing claim, cancellation of an existing claim or addition of a new claim, must include a complete listing of all claims ever presented, including the text of all pending and withdrawn claims, in the application. The claim listing, including the text of the claims, in the amendment document will serve to replace all prior versions of the claims, in the application. In the claim listing, the status of every claim must be indicated after its claim number by using one of the following identifiers in a parenthetical expression: (Original), (Currently amended), (Canceled), (Withdrawn), (Previously presented), (New), and (Not entered).

(1) *Claim listing.* All of the claims presented in a claim listing shall be presented in ascending numerical order. Consecutive claims having the same status of "canceled" or "not entered" may be aggregated into one statement (*e.g.*, Claims 1–5 (canceled)). The claim listing shall commence on a separate sheet of the amendment document and the sheet(s) that contain the text of any part of the claims shall not contain any other part of the amendment.

(2) *When claim text with markings is required.* All claims being currently amended in an amendment paper shall be presented in the claim listing, indicate a status of "currently amended," and be submitted with markings to indicate the changes that have been made relative to the immediate prior version of the claims. The text of any added subject matter must be shown by underlining the added text. The text of any deleted matter must be shown by strike-through except that double brackets placed before and after the deleted characters may be used to show deletion of five or fewer consecutive characters. The text of any deleted subject matter must be shown by being placed within double brackets if strike-through cannot be easily perceived. Only claims having the status of "currently amended," or "withdrawn" if also being amended, shall include markings. If a withdrawn claim is currently amended, its status in the claim listing may be identified as "withdrawn—currently amended."

(3) *When claim text in clean version is required.* The text of all pending claims not being currently amended shall be presented in the claim listing in clean version, *i.e.*, without any markings in the presentation of text. The presentation of a clean version of any claim having the status of "original," "withdrawn" or "previously presented" will constitute an assertion that it has not been changed relative to the immediate prior version, except to omit markings that may have been present in the immediate prior version of the claims of the status of "withdrawn" or "previously

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presented.” Any claim added by amendment must be indicated with the status of “new” and presented in clean version, *i.e.*, without any underlining.

(4) *When claim text shall not be presented; canceling a claim.*

(i) No claim text shall be presented for any claim in the claim listing with the status of “canceled” or “not entered.”

(ii) Cancellation of a claim shall be effected by an instruction to cancel a particular claim number. Identifying the status of a claim in the claim listing as “canceled” will constitute an instruction to cancel the claim.

(5) *Reinstatement of previously canceled claim.* A claim which was previously canceled may be reinstated only by adding the claim as a “new” claim with a new claim number.

Since the reply was filed prior to the effective date, the current claims are acceptable at this time in view of the case being a “paper” case. However, this application will be converted to an (IFW) e-case after applicants file their reply. The claims are now scattered among various papers, whereby it will be impossible to properly examine the claims after conversion due to the problems inherent in the IFW/eDAN software, without a complete and self contained listing of claims as required by the new rules. Therefore, applicants’ reply to this action, to be complete, must include a new listing of claims in accordance with the new rule, even if no amendment is contemplated.

3. Claims 12-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 12, lines 2-4, a polymer and solids together do not constitute a rocket propellant, applicants’ arguments notwithstanding. Thus, the recitation is indefinite for implying something not stated, whereby the metes and bounds of the invention are not clear. In line 6, there is no antecedent basis for “poly(tetramethylene ether)”, lacking where ever found, as also in claim 14, line 2. In claims 15-17, line 1, “compound is” is inconsistent with the broad claim scope of “comprising.” The term “is” appears equivalent to “consists of” which causes the conflict. See MPEP 2111.02 as to the meaning of such transitional terms. In claims 15-17, there is no antecedent

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basis for “HTCE”. See the cited prior art. In Yu, USP 5,120,790, for example, see col. 7, lines 54-58, where the properties of polymers, specifically “polylactones”, may be varied to obtain desired properties. The quoted language in claim 12 is ether, which may be a number of things, including a linking moiety between separate polycaprolactone blocks. Thus, the claim 12 term “caprolactone ether” binder forms no basis for a degradation product of poly(tetramethylene ether), just as set forth in Paper No. 5. See also col. 10, lines 45-52, where the part of the polymer with a subscript of “m” is a polylactones block, and the “(PolyEt)” part near the right side of the structure is a polyether. As set forth, such polyethers may be made from an alkylene oxide of choice, including a number of such in lines 50-52, including THF. While THF will yield the claimed reaction or degradation product, polymers of other recited choices, such as propylene oxide, will not. Thus, applicant’s language is improper, and the metes and bounds of the claims cannot be determined. Attorney arguments do not limit the claims. Further, a mere “ether” as recited in line 3, does not require or yield any “poly” compound, as set forth in line 6. Another way to look at this issue is as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. The omitted elements are: the content of the “ether” of line 3, which content is necessary to result in a “poly (tetramethylene oxide)” of line 6, or any other source or precursor of the recited “poly (tetramethylene oxide).” In this regard, applicants’ arguments are not cogent. It was believed from the content of the claims, that applicants were reasonably skilled in polymer science. Such would be an expected level of skill in the art, which is viewed as the hypothetical person of ordinary skill in the art, as Judge Rich pointed out in *In re Sovish*, 226 USPQ 771, not the absence of ordinary skill.

It is the claims which define the invention, not the specification. This is the essence of the second paragraph of 35 USC 112, that the claims “particularly point out and distinctly claim the

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invention.” Applicants have pointed to no part of the statute that recites that the specification particularly points out the claimed invention. For applicants to argue that the specification provides detail without correspondingly amending the claims does not comport with standard patent practice. This same issue exists with respect to HTCE, which may have various meanings. If, in the first instance, a proper chemical term was used with “(HTCE)” following it, then succeeding uses of HTCE alone would be okay. The “E” part of HTCE could refer to an ether moiety, as required in claim 12, line 3, and the “C” part could refer to capryl, or Carbitol™, or other chemical moieties or things which begin with “C”, such that the claims do not “particularly point out” the invention. Applicants’ current usage is inconsistent with, even repugnant with, ordinary understandings and practice in chemical applications, which this application most assuredly is. While applicant may be his or her own lexicographer, a term in a claim may not be given a meaning repugnant to the usual meaning of that term. See *In re Hill*, 161 F.2d 367, 73 USPQ 482 (CCPA 1947).

4. Claims 12-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over O’Neill et al. in view of Shaw et al., Umezawa et al., Kolonko et al., and Tyrell et al.

O’Neill et al. teach a method of reprocessing propellants by depolymerizing the binder thereof with dilute acid or base, and thereafter recovering solids such as HMX. In col. 1, lines 40-48, the first noted binder to be so treated is the result of curing a combination of hydroxy terminated polyester such as polyglycol adipate and a hydroxy terminated polyether, which is cured with a polyisocyanate to form a polyurethane polymer binder. As to the method steps, note col. 2, “Example 1”, where the polymer is dissolved and in lines 25-28, the HMX is separated out, collected and dried. This is also in view of the teaching in col. 1, lines 28-29, as to being “unreactive”. Thus, while the later language states that the polymer dissolves, this would include reacting with water or weak acids or bases, to produce low MW products that are soluble. Further, from col. 1, lines 35-37,

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“reuse” of the recovered material is clearly suggested. As to this well known aspect of “dissolving” involving depolymerizing, see Shaw et al., col. 1, lines 42-60. In line 51 especially “swelling” and “depolymerizing” are taught interchangeability, and in col. 4, lines 20-22 refers to “disrupting”, e.g., clearly depolymerizing. Then, in col. 4, lines 47-57, the language refers to “solution” of the binder. Thus, the language in the art uses dissolution to refer to going into solution, sometimes without noting that this also is due to depolymerizing the polymer to lower MW products which may be dissolved. This reference also makes it perfectly clear that the method is general, whether for compositions with HMX or with oxidizers and metal (e.g., aluminum) fuel, see col. 5, lines 7-9, for propellants with inorganics, while in col. 5, lines 25-43, is taught a propellant with a nitrate ester plasticizer, as is notoriously well known, and containing a major part of HMX as well as aluminum and AP. Further ingredients such as plasticizers, curing catalysts, etc. are also to be found in the compositions, as is notoriously well known.

It would have been obvious to substitute notoriously well known ingredients, including specific well known prepolymers to form the binder, and to vary specific well known method parameters to optimize the process taught there. It is well settled that optimizing a result effective variable is well within the expected ability of a person of ordinary skill in the subject art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980), *In re Aller*, 220 F.2d 454, 105 USPQ 233 (CCPA 1955). Further, substitution of similar notoriously well known ingredients in what is otherwise the same process and which yields the same result would also have been obvious. Compare *In re KUEHL*, 177 USPQ 250 (CCPA 1973), and *In re Ochiai*, 37 USPQ2d 1127 (CA FC 1995).

This original rejection over prior art was to advance prosecution and only as the claims were understood, as it has been held improper, reversible error, to rely on speculation as to the meaning

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of indefinite claims, and then reject that speculative meaning on prior art. *In re Steele*, 305 F.2d 858, 134 USPQ 292 [CCPA 1962], *Ex parte Brummer*, 12 USPQ2d 1653 at 1655 [USPTO BOPAI 1989].

In reply, applicants controvert the aspect of the rejection as to “notoriously well known” ingredients, e.g. In the first place, the examiner points to the indefiniteness of the claims. As claim 15 recites HTCE and applicants have not further defined the claim language, the language of claim 12 must be construed as reading on any HTCE. In this, O’Neill et al., at col. 1, lines 45-48 teaches a hydroxy terminated [“HT”] polymer that may include a polyether [“E”] that is capped [“C”] which amounts to teaching a “HTCE”. Thus, the language of claim 12 must be obvious over O’Neill et al., or this reinforces that the claims are indefinite. Secondly, the polymers are notoriously well known, and show as follows. In O’Neill et al. and Shaw et al., the polymers are (may be) polyurethanes. From Umezawa et al., col. 4, lines 36-56, polyurethanes may be made from (line 40) the copolymer of polyether and polyester diol, of which typical examples include (lines 42-43) the “copolymer of polycaprolactone diol and polytetramethylene ether glycol”. Further, the curing agent or polyisocyanates may be “lysine diisocyanate”, line 52, just as taught in O’Neill et al. Thus, substitution of such a specific, notoriously well known polyurethane for the polyurethane taught in O’Neill et al. would have been obvious. While that part of Umezawa et al. does not use the inherent term “block” copolymer, applicants are referred to claim 13 of Umezawa et al., which does use that language in claim 13, e.g., lines 4-8. Kolonko et al. Is cited to further show specific ingredients used in such propellants, including that the polymer binders include polycaprolactone, in the Abstract thereof, as well as other ingredients throughout the specification thereof. Tyrell et al. further show such copolyetherester elastomers, which may include moieties of poly(alkylene ether) glycol and caprolactone, in the Abstract thereof. These may be “block” in form, co. 1, line 31, and may include “poly(tetramethylene ether) glycol” (line 40) and “polycaprolactone” (lines 41-42), generally in lines



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30-47 of col. 1. Further detail is set forth in col. 3, lines 17-43. However, in Tyrell et al., the further reaction of the copolymer with a polyisocyanates curing agent is not taught. None-the-less, this clearly teaches that preparation of various copolymers from various different diols and polycaprolactone is well known in the art.

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Tremblay et al. further teach polyurethane elastomers binders as binders for propellants, and wherein the polymer may be made from copolyesters including polycaprolactone, and in block form, col. 5, line 64- col. 6, line 32, especially line about 27 for the "block" teaching as to polycaprolactone. Blackburn, in col. 15, line 55-col. 16, line 40, teaches that various such polymers, e.g., with polycaprolactone or block copolymers with polytetramethylene glycol, are known as being easily degradable, e.g., biodegradable. Asrar et al., in col. 1 generally, is similar as to polyester ethers and polyester urethanes (line 13), also in col. 4, lines 44-63, and line 59 for polycaprolactone diol. These further show the well known state of the art, as to such polymer details and the properties thereof. In like manner, Yu further teaches polymer details.

6. Applicant's amendment, and applicant's challenge of what was stated to be well known in the art, necessitated the new ground(s) of rejection (and prior art cited to show the factual basis of the well known state of the art) presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edward A. Miller whose telephone number is (703) 306-4163. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Carone can be reached on (703) 306-4198. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Miller/em  
August 19, 2004

**EDWARD A. MILLER  
PRIMARY EXAMINER**